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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/782,216

02/19/2004

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04-01

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04/04/2007

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EXAMINER

ALI, SHUMAYA B

ART UNIT

PAPER NUMBER

3771

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
|--|-----------|---------------|
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3 MONTHS

04/04/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/782,216

Applicant(s)

PIERRY, ANTHONY T.

Examiner

Shumaya B. Ali

Art Unit

3771

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 February 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 2/19/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 1-3, and 5-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Mace et al. US 4,958,075.**

As to claim 1, Mace discloses a sidestream gas sampling system (figs. 1 and 2), comprising: a conduit (50) adapted to communicate a flow of gas to a gas measurement site; a gas measurement assembly (20) adapted to measure a constituent of the flow of gas at the gas measurement site; a capillary tube (118, col.7, lines 60-64) adapted to communicate the flow of gas from the gas measurement site; a differential pressure transducer (52,138) in fluid communication with a first portion, and a second portion of the capillary tube (see fig.2), wherein the first portion and the second portion are spaced sufficiently far apart from one another such that a pressure differential exists there between (see fig.2); flow generating means (30) for generating the flow of gas; and a controller (36) operatively coupled to the differential pressure transducer and the fluid transferring means, wherein the controller measures the flow of gas based on the output of the differential pressure transducer and controls the flow of gas via the flow generating means based on the measured flow (col.8, lines 40-62).

As to **claim 2**, Mace discloses the system of claim 1, wherein the flow generating means is a pump (col.5, lines 10-13).

As to **claim 3**, Mace discloses the system of claim 1, wherein first portion is an inlet portion of the capillary tube and the second portion is an outlet portion of the capillary tube (see fig.1).

As to **claim 5**, Mace discloses the system of claim 1, wherein the gas measurement assembly includes an emitter adapted to emit radiant energy through the gas at the gas measurement site and a detector adapted to receive the radiant energy passing through the gas at the gas measurement site (col.2, lines 30-35, and col.5, lines 54-65).

As to **claim 6**, Mace discloses the system of claim 1, wherein the controller controls the flow generating means in a feedback fashion such that the flow of gas remains constant (see col.9, lines 5-35, where the microprocessor controls the vacuum pump to allow a constant flow).

As to **claim 7**, Mace discloses 7. The system of claim 1, wherein the capillary tube communicates the flow of gas from the gas measurement site to ambient atmosphere (through aperture 80).

As to **claim 8**, Mace discloses the system of claim 1, wherein the capillary tube communicates the flow of gas from the gas measurement site to the flow generating means (see fig.1).

As to **claim 9**, Mace discloses the system of claim 1, further comprising a sample cell (24) having an inlet operatively coupled to an end of the conduit to receive gas from the conduit and an outlet operatively coupled to the capillary tube, wherein the sample cell defines the gas measurement site (fig.1, col.5, lines 25-53).

- **As to claim 10**, Mace discloses the system of claim 9, wherein the sample cell is detachable from a housing containing the gas measurement assembly, the capillary tube, the flow generating means, and the controller (see col.6, lines 35-37).

**As to claim 11**, Mace discloses a sidestream gas sampling system in figures 1 and 2, comprising: gas communicating means (118) for communicating a flow of gas to a gas measurement site; gas measuring means (20/24) for measuring a constituent of the flow of gas at the gas measurement site; flow sensing means (52,138) for measuring the flow of gas in the gas communicating means substantially independent of a density of the flow of gas; flow generating means (30) for generating the flow of gas; and controlling means, operatively coupled to the flow sensing means and the flow generating means, for controlling the gas flow generating means based on an output of the flow sensing means (col.8, lines 40-62).

**As to claim 12**, Mace discloses the sidestream gas sampling system of claim 11, wherein the flow generating means is a pump (col.5, lines 10-13).

**As to claim 13**, Mace discloses the sidestream gas sampling system of claim 11, wherein the flow sensing means is a differential pressure transducer in fluid communication with a first portion and a second portion of a capillary tube (118).

**As to claim 14**, Mace discloses the sidestream gas sampling system of claim 13, wherein first portion is an inlet portion of the capillary tube and the second portion is an outlet portion of the capillary tube (see fig.1).

**As to claim 16**, Mace discloses the sidestream gas sampling system of claim 13, wherein the capillary tube communicates the flow of gas from the gas measurement site to ambient atmosphere (through aperture 80).

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As to **claim 17**, Mace discloses the sidestream gas sampling system of claim 13, wherein the capillary tube communicates the flow of gas from the gas measurement site to the flow generating means (see fig.1).

As to **claim 18**, Mace discloses the sidestream gas sampling system of claim 13, wherein the controlling means is operatively coupled to the differential pressure transducer and the flow generating means to control the flow generating means based on an output of the differential pressure transducer (col.8, lines 40-62).

As to **claim 19**, Mace discloses the sidestream gas sampling system of claim 19, wherein the controlling means controls the flow generating means such that a rate of the flow of gas remains constant (see col.9, lines 5-35, where the microprocessor controls the vacuum pump to allow a constant flow).

As to **claim 20**, Mace discloses the sidestream gas sampling system of claim 11, wherein the gas measuring means includes: radiant energy emitting means for emitting radiant energy through gas at the gas measurement site; and detecting means for receiving the radiant energy passing through the gas at the gas measurement site (col.2, lines 30-35, and col.5, lines 54-65).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

**Claims 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mace et al. US 4,958,075.**

As to claim 21, Mace teaches a method of sidestream respiratory gas analysis, comprising: communicating a flow of gas to a gas measurement site (via lines 50,118, see fig.1); measuring a constituent of the flow of gas at the gas measurement site (via 24); communicating the flow of gas from the gas measurement site via a capillary tube (118), wherein a first portion of the capillary tube and a second portion of the capillary tube are spaced sufficiently far apart from one another such that a pressure differential exists there between (see fig.1); measuring the pressure differential with a differential pressure transducer in fluid communication with the first portion and the second portion of the capillary tube (via 52/138); and controlling the flow of gas based on an output of the differential pressure transducer (via 34). As to claim 21, Mace lacks a detailed description of the claimed steps, however discloses structural limitations required to perform the method steps as cited (see also rejection cited for claims 1-3, and 5-10). Thus, the method steps as cited in claim 21 would have been obvious result of using the apparatus of Mace.

**As to claim 21**, Mace teaches the method of claim 21, wherein controlling the flow of gas is accomplished in a feedback fashion such that the flow of gas remains constant (see col.9, lines 5-35, where the microprocessor controls the vacuum pump to allow a constant flow).

**Claims 4 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mace et al. US 4,958,075 in view of Adrian US 4,228,352.**

**As to claims 4 and 15**, Mace lacks wherein the capillary tube includes at least one bend. However, Adrian teaches an apparatus for measuring a concentration of gases using bend tube (see figs. 1-7 of Adrian). Adrian further teaches such tube configuration allows for an effective deflection of radiation along the length of the tube (see col.3, lines 1-8, and lines 15-25 of Adrian). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide bend on the tube of Mace in order to effectively deflect radiation along the length of the tube as taught by Adrian.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kofoed et al (US 5,379,650) is cited to teach a gas analyzer.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shumaya B. Ali whose telephone number is 571-272-6088. The examiner can normally be reached on M-W-F 8:30am-5:00 pm.

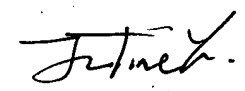
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Justine Yu can be reached on 571-272-4835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Shumaya B. Ali  
Examiner  
Art Unit 3771  
3/30/2007

  
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3/30/07